GERARD
Roofing Designed to Endure

Self-Supporting Valley Design

Gerard Roofs self-supporting valleys are designed to meet the requirements for roof drainage on catchment areas that feed into the valley as indicated in the NZ Metal Roof and Wall Cladding Code of Practice (MRM Code of Practice).

The capacity of a valley gutter is determined in a different manner than that for normal gutters that are flat or very near to flat. By definition a valley is a gutter at the internal intersection of two sloping planes of roof cladding where the roof pitch is greater than 8°. Because the minimum slope of a valley is greater than 5.5° the discharge rate is greater than that of a flat gutter and as the roof pitch increases, the rate of flow, and therefore the catchment area that can be drained, increases proportionately.

Valley gutters must be designed for the greatest rainfall likely in the area in a 50 year return period (ARI). The valley capacity must be capable of discharging the total roof catchment area above the valley plus half the area of any dormer.
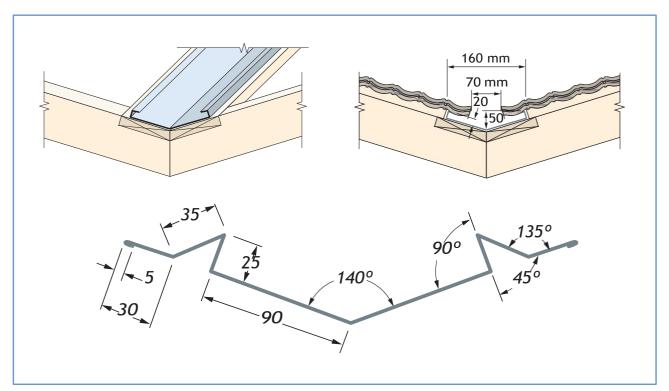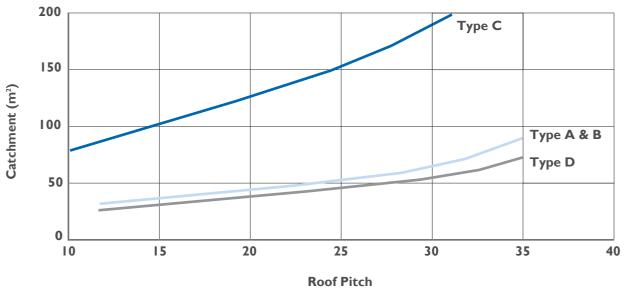

Figure 1 MRM code of practice valley dimensions

Roofing Designed to Endure

Gerard Roofs self-supporting valley dimensions are slightly wider and deeper than those in the MRM Code of Practice shown in **Figure 1** however they have side sections which support the tile battens.

Note: A & B capabilities only equal if hook section A has 20mm height

Type C recommended when roof pitch is <12°

Figure 2 Roof pitch vs catchment area for different valley types

A Gerard Roofs valley is specifically designed based on the information supplied in the MRM Code of Practice and in use history by Gerard Roofs. It can be used for catchment areas that do not exceed the line of Valley Type D for the pitch shown on **Figure 2**.

E2/AS1 requires a valley to be 250 mm wide or 160 mm wide as being suitable for a catchment area of up to 16 m² for roof pitches down to 12.5°. The catchment area of 16 m² for a pitch of 12.5° aligns with **Figure 2**, however beyond 12.5° it does not take into account the flow rates and increase in catchment area that the valley can cope with.

Installation of the Self-Supporting Valley

The self-supporting valley design provides a load bearing capacity of greater than 1.1 kN.

Roofing underlay should be laid up the valley from eave to the top end of the valley and fastened in place so that it is supported by the rafters and extends 150 mm out beyond where the valley edge will sit.

The self-supporting valley is then placed up the valley and fastened to every crossing of rafters with 2 x 90 mm gun nails.

Roofing underlay and tile battens are then installed with the ends of the valley sitting firmly on the outer section of the self-supporting valley. The valley ends are then screw fastened to the valley edge with 8 gauge 60 mm counter sunk screws.

Cut and bent valley tiles are installed so that there is a gap of approximately 50 mm at the centre of the valley.